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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/520,032	03/06/2000	Timothy L. Hoopman	49933USA6H	9385

32692 7590 11/09/2005

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
DEL SOLE, JOSEPH S	

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 11/09/2005

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/520,032
Filing Date: March 06, 2000
Appellant(s): HOOPMAN ET AL.

Kevin W. Raasch
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 3, 2005 appealing from the Office action mailed May 10, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

An appeal to the Board of Patent Appeals and Interferences of co-pending U.S. Patent Application Serial No. 09/955,604.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,152,917	PIEPER et al	10-1992
3,312,583	ROCHLIS	4-1967

4,799,939	BLOECHER et al	1-1989
4,903,440	LARSON et al	2-1990
U.S. S.N. 09/520,032	HOOPMAN et al	Filed 3-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 20, 21, 25-28, 33-54, 94-96 and 98-111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieper et al (5,152,917) in view of Rochlis (3,312,583) and either of Larson (4,903,440) or Bloecher et al (4,799,939).

Pieper et al teach a production tool suitable for use in manufacturing an abrasive article having a plurality of three-dimensional cavities (Fig 18); wherein the cavities each have dimensions defining the cavity (Fig 18), wherein each of the cavities has a single opening; the cavities each have a geometric shape defined by a substantially distinct and discernible boundary which includes substantially specific dimensions (Figs 6 and 18); angles forming the geometric shape defined by at least four planar surfaces wherein adjacent planar surfaces of one three-dimensional cavity meet at an edge to define an angle of intersection therebetween (Fig 18); the tool having a first, second, third and fourth plurality of cavities wherein the first (second, third or fourth) plurality of cavities each have a first (second, third or fourth) geometric shape and first (second, third or fourth) plurality of angles forming the geometric shape (Fig 18); the production tool is a coating roll (col 9, lines13-20); a first (second, third or fourth) group of cavities has a first (second, third or fourth) shape; the cavities are defined by a substantially distinct and discernible boundaries which include substantially specific dimensions (Fig 6 and 18), each of the cavities have a boundary; each of the cavities have dimensions defining the cavity, the dimensions including base lengths (Fig 18); the production tool is an engraved metal roll (col 9, lines 26-29).

Pieper et al fail to teach at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair; the angles being different in at least two of the cavities; wherein at least one of the angles of the first (second or third) plurality of is different from all of the angles of the first (second, third or fourth) plurality of angles; wherein the first (second, third or fourth) group of cavities has a different shape than a first (second, third or fourth) shape; wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair; wherein at least one of the base lengths of the first (second or third) plurality of is different from all of the base lengths of the first (second, third or fourth) plurality of angles.

Rochlis teaches a production tool suitable for use in manufacturing an abrasive article (col 1, lines 50-56) which includes a plurality of cavities having geometric shapes, angles and dimensions. At least two of the cavities have different angles. Note that 9 cavities are shown with a first plurality of rectangular cavities, a second plurality of circular cavities, and a third plurality of triangular cavities defining 20 pairs of adjacent cavities, wherein 14 of the pairs have at least one dimension, such as base edge lengths, which is different between the two cavities of the pair. Thus, 70% of the pairs have at least one dimension which is different between the two cavities of the pair. At least one of the angles or base edge lengths of the first plurality is different from all the angles or base edge lengths of the second plurality and the third plurality. At least one of the angles or base edge lengths of the second plurality is different from all the angles or base edge lengths of the first plurality and of the third plurality. At least one angle of

intersection of the first three-dimensional cavity being different from all angles of intersection of the second three-dimensional cavity, at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair, the angles are different in at least two of the cavities, wherein at least one of the angles of the first plurality is different from all of the angles of the second, third and fourth plurality of angles and at least one of the angles of the second plurality is different from all of the angles of the first, third and fourth plurality of angles and at least one of the angles of the third plurality is different from all of the angles of the first, third and fourth plurality of angles, wherein at least two adjacent cavities have at least one dimension different between the two cavities, wherein a first group of cavities has a first shape and a second group of cavities has a second, different shape, wherein a first group of cavities has a first size and a second group of cavities has a second, different size, wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair, wherein the first plurality of cavities each have a first geometric shape including a base and first plurality of base edge lengths forming the base of the geometric shape and the second plurality of cavities each have a second geometric shape including a base and second plurality of base edge lengths forming the base of the geometric shape, and wherein at least one of the base edge lengths of the first plurality is different from all of the base edge lengths of the second plurality of base edge lengths for the purpose of producing pile like products having an almost infinite number of specifically different physical characteristics, presenting many different visual, textural and other effects (col. 1, lines

28-36). Larson teaches an abrasive composition (Fig 1) having abrasive particles of non-uniform shapes and sizes (Fig 1, #20) for the purpose of achieving improved grinding performance (col 3, lines 15-50). Bloecher et al teach an apparatus that produces abrasive composite members of different sizes or different shapes or both different sizes and different shapes (col 2, line 5 - col 5, line 67) for the purpose of providing the advantage of longer life (col 5, lines 60-67).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have to have modified the abrasive article production tool (a pile-like product) of Pieper et al with the cavities of varied dimensions as taught by the production tool of Rochlis because it enables a production tool capable of producing an abrasive article (pile like articles) with an almost indefinite number of specifically different physical characteristics, presenting many different visual, textural and other effects and it would have been obvious to desire cavities that produce such a varied collection of abrasive member sizes and shapes as taught by Larson and Bloecher because such variations achieve a high rate of cut and optimize cut rate, life of the abrasive article and surface finish on the workpiece as well as improve grinding performance.

The limitation "an abrasive article that comprises a major surface having deployed in fixed position thereon first and second three-dimensional abrasive composites, each of said composites comprising abrasive particles dispersed in a binder and having a shape defined by a substantially distinct and discernible boundary which includes substantially specific dimensions, where said first abrasive composite

has a shape having specific first dimensions and said second abrasive composite has a second shape having second specific dimensions, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces, wherein adjacent planar surfaces of one composite meet at an edge to define an angle of intersection therebetween, wherein at least one angle of intersection of said first abrasive composite is different from all of the angles of intersection of said second composite" (Claims 20, 21) does not further limit the apparatus claims because 1) it is drawn to the product produced not the apparatus used for producing the product and 2) it does not serve to limit the structure of the apparatus beyond the specific structural limitations of the claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17, 20, 21, 25-28, 33-54, 94-96 and 98-111 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being

unpatentable over claims 23, 24, 30-32, 89, 90, 92, 93 and 133-148 of copending Application No. 09/955,604. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of claims 23, 24, 30-32, and 133-148 of copending Application No. 09/955,604 by eliminating elements thereof because omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before, In re Karlson, 136 USPQ 184.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

(10) Response to Argument

Applicant argues that the motivation to combine references in the rejection does not meet the requirements for a prima facie case of obviousness because it is alleged that the proposed modification would render the prior art unsatisfactory for its intended use. The Applicant states that Pieper utilizes an abrasive article with a high degree of consistency because then conventional processes adversely affect consistency. It is also argued that Pieper describes a relationship between the consistency of the abrasive article and the finish it imparts. Therefore, it is argued that the addition of the non-uniformities of Rochlis, Larson or Bloecher to Pieper would render the prior art Pieper unsatisfactory.

The Examiner disagrees. The discussion in Pieper at col 1 lines 57-61 set s forth that then conventional abrasive article producing process created inconsistent articles in

that the adhesive or binder flow before or after curing. This lack of consistency refers to an inability to consistently form the desired shaped of the product. The lack of consistency being avoided by Pieper does not coincide with the "inconsistency" of the shapes taught by Rochlis. In fact, Rochlis teaches a consistency of shapes. As shown in Figure 21, Rochlis will form an abrasive article that has a row of consistently square shapes, a row of consistently rounded shapes and a row of consistently triangular shapes. Provided a process is used that prevents adhesive or binder flow before or after curing, the abrasive article will be consistent despite a combination of different shapes. Such combination does not destroy Pieper, but rather enables the article of Pieper to have more varied abilities due to an almost infinite number of specifically different physical characteristics. Pieper is teaching the ability to consistently and predictably create an abrasive article. The combined teaching of a consistently and predictably created abrasive article having an infinite number of textures (as taught in Rochlis, Larson and Bloecher) does not destroy Pieper. In fact, Pieper teaches that the surface can have varied shapes such as at col 7, lines 4-15 and col 8, lines 15-25.

The Applicant argues that when applied to a production tool in the form of a roll, the assertions with respect to Rochlis are not supported by Rochlis. The Applicant argues that Figures 21 and 22 of Rochlis teach a tool in the form of a flat sheet, not a roll.

The Examiner disagrees. Rochlis sets forth various shapes that can be used to make an abrasive article. Rochlis does not teach against using its shapes in a roll, despite not explicitly teaching their use in a roll. Pieper is utilized to teach abrasive

articles and a roll, Rochlis is utilized to combine their shapes in an abrasive article with the shapes of Pieper in an abrasive article to teach the claimed invention. The teaching of a roll is found in Pieper and Rochlis does not teach against a roll.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Joseph S. Del Sole

Joseph S. Del Sole, November 3, 2005

Conferees:

Duane Smith

Michael Colaianni AU 1732